Protecting the Homes and Citizens of California

Wildland-Urban Interface Building Standards

Can we learn from our past?

Year after year, Californians have watched raging wildfires threaten and destroy their communities.

The history of these fires dates back to the early 1900s when people began to settle in the areas of California where wildfire roamed for eons. Homes were burned, lives were lost, businesses ruined, communities devastated and millions of dollars spent on trying to suppress those fires... *There must be a better way!*

Key Concepts

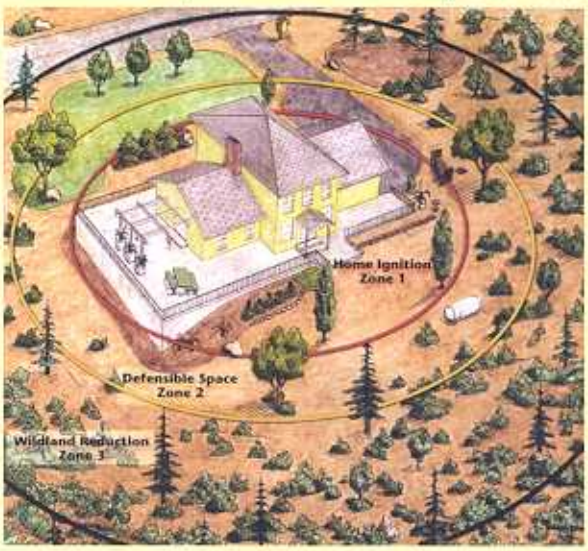
Recent research in Wildland-Urban Interface (WUI) home loss has provided us with some relatively new information on why homes burn and how we can best protect them BEFORE the fires occur. It is important to understand a few key concepts:

Conflagration Fires

Most of our highest losses to fire occur during hot, windy days or nights when flames spread so rapidly that the number of homes burning quickly overwhelms firefighting resources. If a house ignites, it usually burns to the ground before firefighters arrive to extinguish the fire. We solved this problem in our cities, now it's time to solve it in our interface areas.

Defensible Space

While not part of these building standards, defensible space remains a critical piece of the solution.



Defensible space keeps the direct flames and heat away from the sides of the house by eliminating flammable vegetation in the home ignition zone and reducing it in the outer zones.

Ignition-Resistant Construction

This type of construction uses currently available building materials to create an "envelope" around the house to decrease the number of burning embers that enter the building and ignite fires. Commonly these embers have fallen on roofs, blown in through vents, piled up in cracks, and become lodged under boards. By building the home in a way that diminishes ember intrusion, we can reduce the main cause of home loss in these WUI fires.

Performance-Based Building Standards

As building codes become more responsive to evolving technologies and innovative designs, the concept of describing the desired performance rather than dictating a particular material or style has gained acceptance in the building and design world. These proposed building codes are based on lab-tested and verifiable performance standards that describe what types of exposure to wildfire a building must be able to withstand. This allows the use of a wider range of materials and designs than a solely prescriptive approach.

WUI Building Standards

The solution is to identify a building site according to its surrounding vegetation, defensible space, slope, topography, and fire history by giving it a Fire Hazard Severity Zone (FHSZ) classification - and then match it with the appropriate building construction features. Some homes will need more protective construction features than others depending on their FHSZ classification.

Builders, firefighters, researchers, city and county representatives, housing experts, and the insurance industry have worked with the State Fire Marshal for the past three years to develop these standards. The proposed regulations will be Implemented through two phases, a few years apart. Once adopted, they will become Chapter 7A of the CA Building Code.

Phase One - The first phase will immediately enact provisions for roofing and attic venting that are found in other sections of the Building Code. The biggest change from current practice would be the elimination of vents that are prone to ember intrusion. The Building Industry believes it can respond to these new regulations with existing materials and staff.

Phase Two - This phase will include ignition-resistant siding and decking, doublepaned windows, eave and wall vents that reduce/prevent ember penetration, and enclosed overhanging decks. All of these features have been tied to significant home loss in WUI fires and will substantially reduce fire losses and costs when adopted.

Phase Two would become applicable after CDF has published updated Fire Hazard Severity Zone maps. These maps will assist local officials in determining the applicable Fire Hazard Severity Zone and its associated Chapter 7A sections.

Pictures Credited to:
Robert A. Eplett/OES CA
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California Department of Forestry and Fire Protection Wildland-Urban Interface Building Standards Committee

A large number of people have contributed to the development of these standards over the past several years. Starting with the research and testing at UC Forest Product Laboratory in the late 1990s and continuing to the standing committee members today, this work has been a labor of passion and commitment by many. The current members of the WUIBS Committee and the supporting staff are:

Ethan Foote	Co-Chair
Kate Dargan	Co-Chair
Leslie Haberek	CDF/SFM
Joe M. Garcia	CDF/SFM
Hugh Council	CDF/SFM
Randy Roxson	CDF/SFM
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For further information, copies of the standards, or text of the regulations please go to the State Fire Marshal/CDF website at:

http://osfm.fire.ca.gov/

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